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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,823	11/28/2001	Marc N. Palmisiano	S-94,534	9772

7590 03/18/2003

Paul A. Gottlieb, Assistant General Counsel for
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EXAMINER

DERRINGTON, JAMES H

ART UNIT PAPER NUMBER

1731

DATE MAILED: 03/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,823

Applicant(s)

PALMISIANO ET AL.

Examiner

James Derrington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 12-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-11, drawn to a process, classified in class 264, subclass 625.
- II. Claims 12-20, drawn to a product, classified in class 501, subclass 87.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I and Group II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a materially different process such hot pressing.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Ms. Julia Moody on March 14, 2003 a provisional election was made with oral traverse to prosecute the invention of Group I, claims 1-11. Affirmation of this election must be made by applicant in replying to this Office action. Claims 12-20 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (2,938,807) or Fitchmum (3,947,550) in view of Kennedy (5,024,795).

Each of Anderson (Fig.) and Fitchmum (Col. 6, line 46 thru Col. 7, line 7) disclose the steps of producing refractory metal carbide by reaction sintering comprising molding an organic resin binder to form a preform, heating to cure the resin, carbonizing, i.e. heating to pyrolyze the resin and then infiltrating molten silicon into the perform. Claim 1 additionally recites "casting" as the molding technique while the primary references do not show this type of molding process. Kennedy discloses a related process of molding performs for use in preparing shaped composites prepared by infiltration. Kennedy discloses that the preforms can be prepared by conventional molding processes such as casting (Col. 10, line 15 ff) and shows the manipulative step of pouring a slurry containing an organic binder into a mold (See Col. 11, lines 15-18). It would have been obvious for one of ordinary skill in the art to have used casting as the molding process for preparing the preforms of Anderson or Fitchmum. One of ordinary skill in the art would have expected that molding by casting would have produced the desired result in view of the teachings of Kennedy. The recitation "complex shape" of claim 3 has different meanings to different observers and does not provide a patentable distinction. Anderson shows curing and infiltration temperatures including those recited in the claims (See examples). Temperature elevation to the infiltration temperature as shown by Anderson would clearly include the instant carbonization or pyrolysis temperature. Fitchmum also shows curing, pyrolysis and infiltration temperatures within the ranges of claims 6 and 8 (See examples and Col. 4). The limitations of claim 7 would be inherent

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in the references when changes are made to the compositions as demonstrated in the working examples. The perform of Kennedy may also include fibers (paragraph bridging Cols. 10-11). It would have been clearly obvious to include high temperature fibers in the instant perform for the purpose of providing reinforcement.

Claims 2, 4-5 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (2,938,807) or Fitchmum (3,947,550) in view of Kennedy (5,024,795) as applied to claims 1, 3 and 6-9 above, and further in view of Singh (5,945,166).

The Singh reference is directed to a related process of infiltrating a carbonaceous body with molten silicon or metal alloys (Abstract). First it is noted that both Anderson (Table 3) and Fitchmum (Col. 2, line 59 ff) show their preforms prepared from resins that include furfural, also include silicon carbide and are cured. The Singh reference provides additional details regarding furfural alcohol resins that include glycols as pore forming agents, p-toluene sulfonic acid curing agents, silicon carbide as a shrink reducing agent (See paragraph bridging Cols 3 and 4). It would have been obvious for one of ordinary skill in the art to have used the particular ingredients of Singh for preparing the preforms of the primary references for the reasons disclosed by Singh. Additionally, it is known to infiltrate carbonaceous bodies or performs with silicon alloys, e.g. Si and Zr for the preparation of silicides as evidenced by Singh (See Abstract and Col. 5, line 23 ff). It would have been obvious to use molten silicon with an alloy for infiltration of a carbon body if this the type of body desired. Finally the carbonaceous bodies of Singh also include fibers (Abstract).

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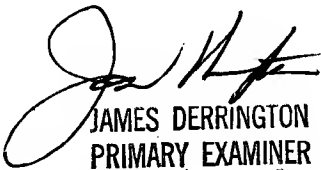
Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Derrington whose telephone number is 703 308-3832. The examiner can normally be reached on 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-7718 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

jd
March 15, 2003


JAMES DERRINGTON
PRIMARY EXAMINER
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